

Southern Pacific Railroad Natron Cutoff, Tunnel 18
Milepost 410
Dorris Vicinity
Siskiyou County
California

HAER No. CA-219

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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
San Francisco, California

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HISTORIC AMERICAN ENGINEERING RECORD
SOUTHERN PACIFIC RAILROAD NATRON CUTOFF, TUNNEL 18

HAER No. CA-219

Location: Milepost 410, Dorris vicinity, Siskiyou County, California
UTM: 10-590135-4649930
Quad: Dorris, Calif. 7.5', Provisional Editon 1985
(west portal)
UTM: 10-590470-4650050
Quad: Dorris, Calif., 7.5', Provisional Editon 1985
(east portal)

Date of Construction: 1909.

Engineer: Southern Pacific Railroad Engineering Department.

Present Owner: Union Pacific Railroad, 1416 Dodge Street, Omaha NE.

Present Use: Railroad Tunnel.

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Significance:

The Southern Pacific Railroad Cascade Route, built as the Natron Cutoff between Black Butte, California and Natron, Oregon was one of a series of major rebuildings and realignments of the original Central Pacific Railroad. Begun in 1905 under railroad magnate E.H. Harriman to replace the original Central Pacific route over the Siskiyou Mountains into Oregon, the Natron Cutoff had to overcome both natural and political obstacles. Stalled by government anti-trust lawsuits against Harriman, by World War I and the ensuing federal takeover of the nation's railroads, the Natron Cutoff finally overcame the rugged Cascade Mountains of Oregon to reach completion in 1927, at an ultimate cost of nearly \$40 million. For the purpose of the current project, the Natron Cutoff was found likely to be eligible for the National Register of Historic Places at the state level of significance under Criterion A for its significance in engineering, transportation history, and the economic history of central Oregon, and in the development of the West, and under criterion B for its association with E.H. Harriman. The Natron Cutoff's period of significance is 1905 to 1945, from the beginning of construction in 1905, through the years of its role in the economic development of the central Oregon, to the conclusion of the railroad's achievements in World War II. Built in 1909, Tunnel 18 is a contributive element of this property.

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I. DESCRIPTION

Tunnel 18 is a 1,145-foot, single track railroad tunnel, with concrete portal faces and wingwalls. The semi-circular arched opening is framed in dressed stone masonry voussoirs, the portal has a dressed stone parapet atop a stone masonry belt course topped by dressed stone masonry coping. A coping of dressed stone masonry blocks tops the stepped wingwalls. As-built, the tunnel was concrete-lined for the first fifty feet in from each portal, with the remainder lined in redwood timber; the railroad has subsequently covered the timbering with shotcrete. The tunnel is on a tangent (no curve) alignment, and carries the tracks of the Union Pacific Railroad's (formerly Southern Pacific) Cascade Route line.

II. HISTORICAL INFORMATION

Contractors, Erickson & Petterson of San Francisco built Tunnel 18 (originally numbered Tunnel 2) in 1909 as an element of the reconstruction and extension of a railroad originally built by the Weed Lumber Company from Weed to Grass Lake. Southern Pacific quietly acquired the line in 1905 and began to extend it to Klamath Falls as the California Northeastern Railroad [For a full history of this line and of this undertaking, see the documentation set for the Southern Pacific Railroad Natron Cutoff (Southern Pacific Natron Extension) (Southern Pacific Cascade Route), Southern Pacific Cascade Route Tunnels, HAER No..] After assuming control of the Southern Pacific/Central Pacific and merging them with the Union Pacific in 1901, Edward H. Harriman had embarked on a series of huge reconstruction projects system-wide. One of these was the construction of a new main line through central Oregon to eliminate the original Central Pacific main line that reached Oregon by a torturous climb through the Siskiyou Mountains. Work began on the south end of the project first, with the acquisition and extension of the California Northeastern. In 1906 Harriman initiated work on the north end of the project, by beginning construction of the Oregon Eastern Railroad south from Natron, Oregon toward a meeting with the California Northeastern.

Two contracting firms divided the work, with Erickson & Petterson of San Francisco handling the work on the California Northeastern, and Utah Construction Company of Ogden building the Oregon Eastern. Tunnels 17 (HAER CA-) and 18 were the only tunnels required on the California Northeastern; all the tunnels on the Natron Cutoff conformed to Southern Pacific Common Standard plans.

Erickson & Petterson built their tunnels by driving a drift (a small pilot tunnel) at the spring line of the final arch, and centered. From this they widened the arch to full section down to the spring line. They then drove one or two drifts at grade line and, using black powder (many empty powder cans from DuPont and Clipper Gap Mills still litter the ground near the west portal of Tunnel 18), blasted the remaining bench directly down into dump cars in the drifts. Crews then concreted the first fifty feet of the bore in from the portal, and lined the remainder in timber.

Reaching Dorris on May 1, 1908, the contractors built a temporary line through Klamath Pass between Dorris Hill and D Hill so that construction could continue northward while crews worked on driving Tunnel 1 (today Tunnel 17, HAER CA-) and Tunnel 2 (today

Tunnel 18) through the ridge. It appears that the tunnels were complete by July 1909 since the contractors completed the railroad through to Klamath Falls the following month.

III. SOURCES

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IV. PROJECT INFORMATION

As a result of the 1996 merger of the Union Pacific and Southern Pacific Railroads, a federal undertaking under the jurisdiction of the Surface Transportation Board of the U.S.

Department of Transportation, and in order to accommodate freight trains utilizing longer and taller cars and loads--tri-level auto rack cars and cars carrying double-stacked containers--the Union Pacific will need to increase tunnel clearances on the former Southern Pacific Natron Cutoff. The tunnels, built between 1905 and 1927, are contributing elements of the National Register-eligible Southern Pacific Cascade Route Tunnels Historic District. The railroad has laser-measured all tunnels and will determine clearance needs on a tunnel-by-tunnel basis. Some, because of curved alignment, will require interior work to allow for longer cars such as tri-level auto rack cars; others will require both interior and portal work to provide sufficient vertical clearance for "double-stack" container cars. The latter work may impact the character-defining tunnel portals if crown mining of the tunnels (as opposed to lowering the tunnel floors) is selected. Inasmuch as this would cause an adverse effect to the tunnels, Union Pacific, in consultation with the California and Oregon SHPOs, has elected to record the tunnels for the Historic American Engineering Record. A field review with Oregon SHPO staff resulted in guidance to document representative tunnels from the early and late construction periods. Documentation was carried out by P.S. Preservation Services, John Snyder Field Director and Historian, and Ed Andersen, Photographer. Photos were made in November 1997, and research was carried in June 1997, and from November 1997 through April 1998.